CS220

Software Maintenance
Auto Bug Detection
Others
Agenda for Today

• Administrative
  – Project & Exams

• Quiz 7

• Technical content
  – Software maintenance
  – Auto Bug Detection
Project, Exam
Project milestone 5 & 6

• Milestone 5
  – Due next Monday!
  – Example readme
    • http://www.gnu.org/software/gzip/manual/gzip.html
  – Don’t forget the installation guide!

• Milestone 6
  – Your task will be assigned on Tuesday
  – Due on Friday
  – What to submit
    • An assessment document
    • List of bugs found
    • Grade
Exam

• Include all lectures we covered!

• 4 reference text books are all reserved in Library

• Style similar w/ quizzes & mid-term
Definition

• Software maintenance
  – The process of changing a software system after it has been delivered
Reasons behind maintenance

• Why delivered software needs change?
Reasons behind maintenance

• Why delivered software needs change?
  – Fault repair
  – Platform adaptation
  – System enhancement
Maintenance is important

• 60%--80% of overall IT cost
  – Software is too expensive to discard after one version
A big picture

- Initial development
- Software evolution
- Software servicing
- Phase-out phase
A smaller picture --- evolution process

Software Evolution

Change Request

System Release

System update

Impact Analysis

Release Planning
A smaller picture

• What happened during “software update”?
  – Non-agile way
  – Agile way
Software reengineering

- Redocumenting
- Structure/architecture refactoring
- Programming language translation
- Data reengineering
When to stop supporting a software
When to stop supporting a software

- Business value
- Maintenance expense
Automated Bug Detection

• Semantic bugs
• Memory bugs
• Concurrency bugs
Another fun bug story